

CHAPTER 6 - COLLAMORE LOT

PROPERTY DESCRIPTION AND LAND USE HISTORY

The Collamore lot is located in the middle of Appleton. It is on an abandoned town road 4,300' west of Appleton Ridge Road and 2,200' east of Guinea Ridge Road. The lot sits on the east bank of Pettengill Stream and part of a pond upstream of the old bridge abutments. It measures 41 acres, though the town lists it as 40. It is on both side of the town road. Road frontage is about 1,500' on both sides. Stream frontage is 1,200' and pond frontage is about 1,050'. The lot is entirely forested and contains no buildings.

As with most woodland in this area of Maine, the ownership was farmland (both for crops and pasture) a century and a half ago. Sheep fence, barbed wire and stone walls form the south and east boundaries, plus along the sides of much of the road's length. Two cellar holes are across the road from each other – a larger house on the west side and a small barn on the east. The property has not been commercially harvested. No roads or trails are on the property. The town of Appleton acquired the lot in 1957 as a town forest.

The property is in a remote, heavily forested area. The nearest house is about 1/3 mile to the northwest. Upstream of the pond, to the north, is extensive swampland adjacent to the Pettengill Stream. The adjacent property east of the Collamore lot and north of the road was heavily cut 5-10 years ago. The lot on the west side was heavily cut within the past 2 years.

TOPOGRAPHY AND ACCESSIBILITY

The terrain varies throughout the property. It is a gentle slope in the former cropland along the south side of the road. Moderate slopes elsewhere except in the west corner where the slopes are somewhat steep. Ledge and surface stones are common. The highest elevation is 420' where the town road enters the lot on the southeast side. The lowest point is the Pettengill Stream at 250'. A seasonal stream is near the east corner, flowing northward into the pond. The edges of the Stream and pond are swampy.

The old town road provides access to the lot. However, it no longer is maintained by the town. Only a snowmobile bridge in disrepair currently crosses the Stream, prohibiting truck access. The road from the Appleton Ridge is a good graveled way past Johnson Pond and over Johnson Hill to a wood yard about 1,000' short of the Collamore lot. But the remaining distance is a narrow dugway on a continuous moderate grade with protruding stones and minor erosion. It needs substantial work and gravel to accommodate truck traffic. But if it was repaired, a wood yard can easily be established in the lot along the west side of the road. Failing that, logs could possibly be skidded up the road to the neighbor's wood yard. Either way, the value of the wood is diminished by these extra expenses to gain access.

BOUNDARIES

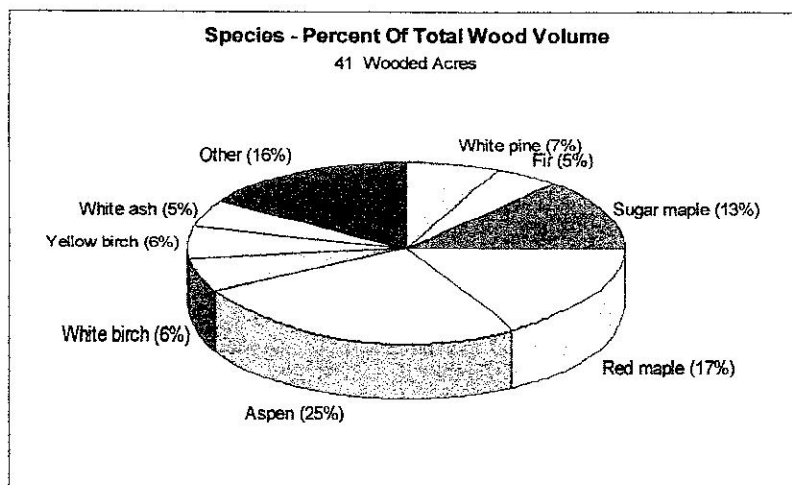
The property has not been surveyed. However, it is clearly defined on the ground. The north boundary is the pond, and the northwest boundary is Pettengill Stream. Old yellow paint spots and ax blazes mark the remaining 3 sides, with the southwest line freshly repainted in orange. The southeast line has a stone wall west of the road and remnants of sheep fence and barbed wire east of the road. An iron pipe marks the east corner. The lot kitty-corner from the Collamore lot was newly blazed and painted blue. The barbed wire and old yellow paint continues downhill to the pond, but more in a northerly direction rather than northwesterly as shown on the town tax map. This difference is why the lot measures 1 more acre than the town's 40-acre listed figure.

TIMBER RESOURCE

Except for the swampy edges of the Stream and pond and the town road, forests cover 41 of the 42 acres of the Collamore lot. Four stands have been identified. Most of the acreage is classified as Hardwood. One 8-acre stand is Mixedwood and a $\frac{1}{4}$ -acre red pine plantation is Softwood. The distribution of timber type among the 4 forested stands is:

Type	# of acres	% of total
Hardwood	33	80
Mixedwood	8	20
Softwood	$\frac{1}{4}$	< 1
	41 acres	100%

In June, 2001, inventory data were taken in the forested areas at 24 variable radius plots on cruise lines running parallel to the southeast and southwest boundaries. One plot represents an average of 1.7 acres. The overall volume estimate is accurate within $\pm 12\%$ nine times out of ten. Error is greater for individual species, products and values.



Hardwood volume makes up 83% of the total. Aspen (bigtooth) makes up $\frac{1}{4}$ of the commercial round wood (trees 6"+ dbh). Red and sugar maple are the next 2 most common trees. Less common species include white pine, white and yellow birch, white ash and fir. Species grouped together in the "Other" category are hemlock, beech, red oak, basswood, black cherry and red pine.

Most of the woodland is made up of mature sawtimber stands, with ages 80 years and greater. It grew up when the land was no longer kept open for agriculture. With mortality of some larger stems and growth of regeneration, it is slowly becoming uneven-aged. Younger trees (50 years) can be found around the house foundation. Stand canopy heights are moderate to tall. The canopies are fully closed except near the Stream.

Tree quality, defined as trees with the potential to become sawtimber, is good. There is an average mix of acceptable trees and low quality trees. Some of the poles are currently designated as pulp due only to small size and are actually good quality growing stock. Sugar maple, red oak white pine are the most valuable species. Through a program of cutting the poor quality individuals and favoring the better trees, overall tree quality will be maintained or improved over time.

The estimated total wood volume on the Collamore lot is 175,000 board feet of sawtimber and 1,430 cords of pulp/firewood. This is worth about \$21,700. For the 41 wooded acres, this comes to 4,270 board feet and 35 cords per wooded acre, which is above average for hardwood forests in this part of Maine. The wood is valued at about \$529/acre, which is average. The value estimate has been discounted by 80% to reflect access costs. Hardwood dominates both timber and pulpwood. Sawlogs comprise 20% of the total commercial wood volume, which is above average. This percentage will increase over time if the good quality small sawtimber is allowed to continue to grow rather than cut prematurely.

Assuming an average growth rate of $\frac{1}{4}$ cord per acre per year, a sustainable harvest level is the equivalent of $10\frac{1}{4}$ cords per year. For a 20-year cutting cycle, 205 cords can then be harvested. This is only a broad total. Due to variability of age, structure and stocking of the forest types, harvest levels will vary among stands.

Tree regeneration consists of shade-tolerant species, mostly beech, sugar maple, fir and hemlock. The density of the regeneration depends on light/shade conditions and wetness on the forest floor. Woody shrubs are limited hazelnut upslope and alders along the swampy edges.

LEGAL RESTRICTIONS

The edge along Pettengill Stream and the pond is zoned as Resource Protection. See the General Chapter for details.

INSECT, DISEASE AND WEATHER INFLUENCES

There are no significant pathological problems on the Collamore lot. In their youth, a few big old pines were affected by the white pine weevil (an insect, the newly hatched larvae of which feed the leading bud at the tips of the trunks and branches). The result is a tree with multiple stems, lowering its economic value. Many of these same pines also have many live lower limbs, a result of growing relatively in the open earlier in its life. These conditions do not harm the tree, but do lower its value as useable sawtimber. Most of the beech is infected with the common beech bark disease (*Nectria-scale*), an eventual fatal affliction. Several aspen and basswood trees have woodpecker holes and cavities, indicating the presence of insects inside the trunk, as well as rot.

WILDLIFE

Most of the Collamore lot is dry, upland forest. Contrasting habitats are the Pettengill Stream and pond, plus their swampy edges. Fresh water is a critical habitat element for all animals. The small stream in the east corner provides water seasonally. The heavily cut neighboring woodlots provide more open ground conditions with grass, herbaceous plants, shrubs and tree seedlings.

Other wildlife habitat features include the extensive number of aspens, which are heavily used by ruffed grouse. Their relative softness also allows them to easily develop cavities in their old age, available to be used by a number of birds. Cavities of varying sizes are found in many of the hardwoods. Snags and deadfall are present. Mast trees (nut producers) include oak, beech, hophornbeam (ironwood) and the hazelnut shrub. Cherry trees provide berries for birds. Porcupines are present in the eastern corner, chewing hemlock saplings.

No Critical Wildlife Habitats have been identified on the lot by the Maine Department of Inland Fisheries and Wildlife. However, the adjacent pond is part of the Pettengill swamp system. It is #6W3, indicating that is of high value for waterfowl and wading bird habitat. No evidence of threatened or endangered plants or animals was noted during the fieldwork. Should such plants or animals be discovered, appropriate measures should be adopted to ensure protection of their habitat.

RECREATION AND AESTHETICS

The old town road is used by snowmobilers and ATVs. Maybe someone may fish in the Pettengill Stream or pond. The property is not posted and is likely hunted in the Fall. A deer stand is on the south side of the red pines. Significant aesthetic features include the Stream, pond, red pine plantation and the cellar holes.

ESTIMATES OF TIMBER VOLUMES AND VALUE BY SPECIES

Town of Appleton - Collamore Lot
June 5, 2001

Products, Species	Volume ^{1,2}	Stumpage ³ Rate	Value ⁴
Sawtimber:	MBF	\$ per MBF	
White pine, grade	17	\$105	\$1,785
White pine, pallet	9	50	450
Hemlock	12	50	600
Red pine	2	50	100
Aspen	65	30	1,950
Red oak	17	180	3,060
Sugar maple	13	180	2,340
Red maple	13	40	520
White ash	10	100	1,000
White birch	10	80	800
Beech	4	40	160
Yellow birch	2	120	240
Basswood	1	40	40
Totals:	175 mbf		\$13,045
Pulpwood:	Cords	\$ per cord	
Fir	90	\$10	\$900
White pine	80	4	320
Hemlock	40	5	200
Red pine	10	5	50
Hardwood pulp*	820	4	3,280
Firewood*	390	10	3,900
Totals:	1,430 cords		\$8,650

Total Estimated Stumpage Value = \$21,695

¹ Total timber volume estimate is ±12% nine times in ten. Error is greater for individual species or products.

² Pulpwood volumes include topwood from sawtimber trees.

³ Stumpage price estimates based on recent local averages, Spring, 2001 and reflect access costs. They are gross values and do not reflect forester fees.

⁴ Represents the "liquidation value" if the entire property was cleared. This is presented for illustrative purposes only and is not recommended.

* Aspen, white birch and basswood are pulpwood; balance of the hardwood pulp is split evenly between firewood and pulp

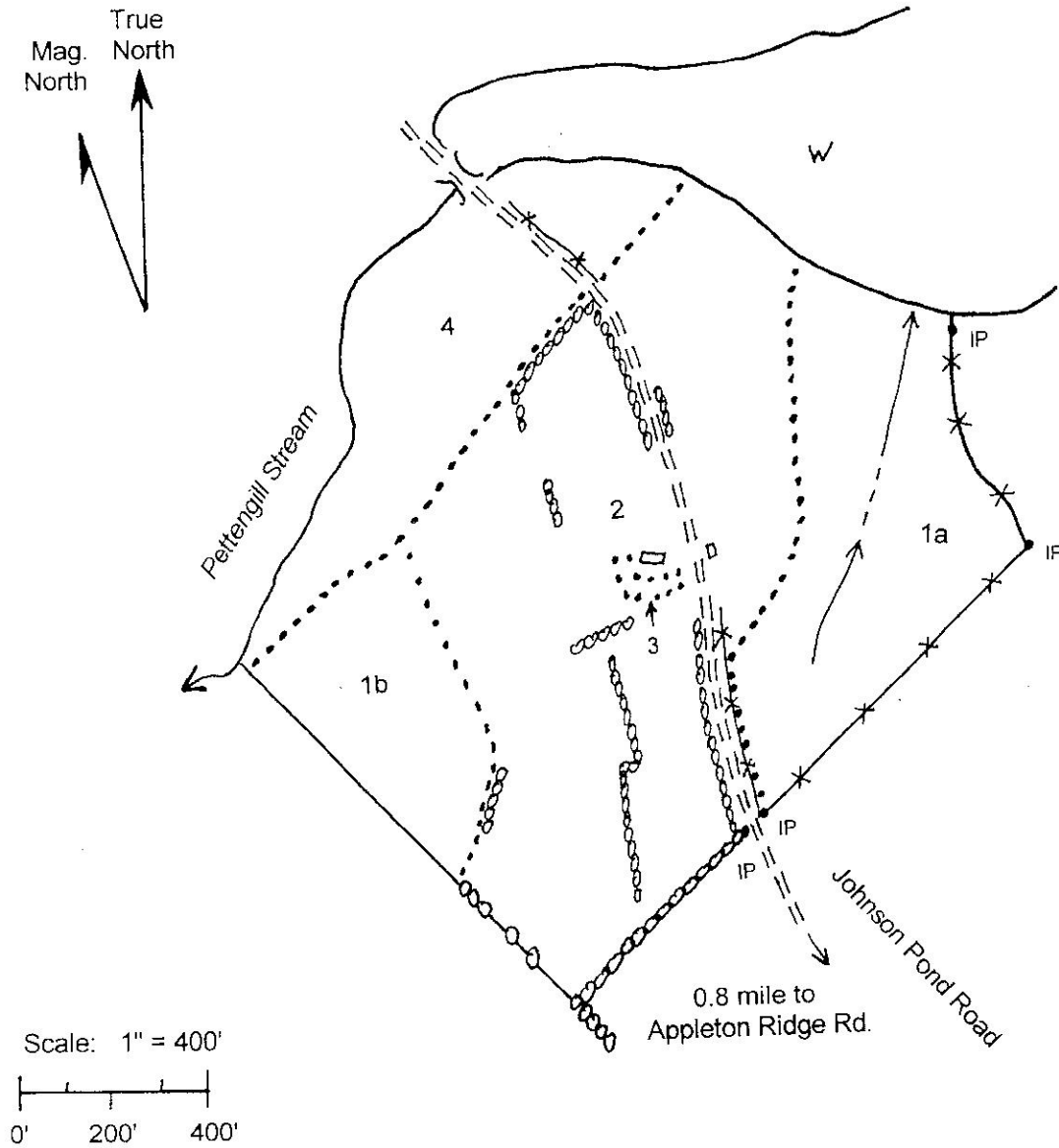
Mitchell Kihn - Mid-Maine Forestry
LPF # 3206

PROPERTY MAP

Town of Appleton

Herb Collamore Lot

Map 9; Lot 21



LEGEND

Stand number and boundary 2
Town road	= = = =
Foundation	=
Iron pin	IP •
Stone wall	oooooooooooo
Wire remnants	-x-x-

FOREST STANDS

Stand	Type	Acres
1	NH2/3A No. Hardwood sawtimber	13
2	H3A Hardwood sawmber	20
3	S3A Softwood sawtimber	1/4
4	M2B Mixedwood poletimber	8
	WOODLAND	= 41 1/4 acres

Town road 1/4

TOTAL PROPERTY = 42 acres

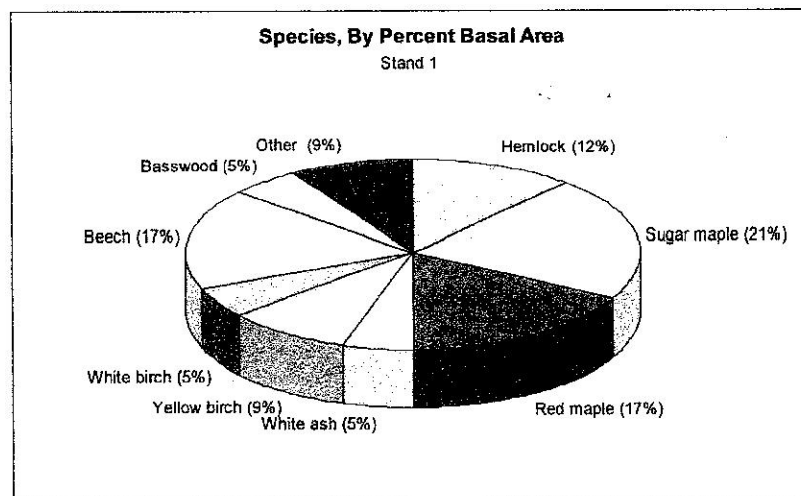
*S=75%+ Softwood; H=75%+ Hardwood; M=Mixedwood

STAND DESCRIPTIONS AND RECOMMENDATIONS

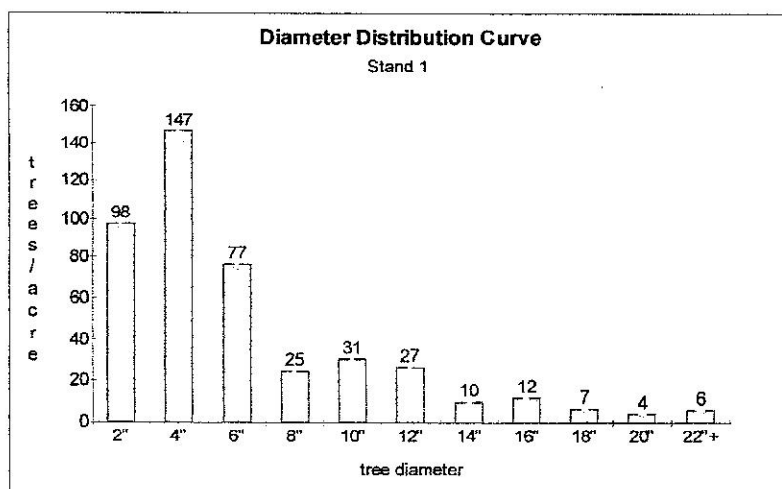
STAND 1 - NORTHERN HARDWOOD SAWTIMBER (NH-2/3-A)

13 acres

Stand 1 is in 2 units. Stand 1a is in the east corner, extending from the road down to the pond. It can be accessed directly from the road. Stand 1b is along the southwest boundary. The terrain is a moderate slope in stand 1a and a somewhat steeper slope in stand 1b. The surface has many stones. Soils are mostly deep to hardpan and well drained. Site quality is excellent for not only white pine and red oak, but also for northern hardwoods. Operability with machines is fair, limited by slope and stones. A Resource Protection zone runs along the edge of the adjacent Pettengill Stream and pond.



Stand 1 is a hardwood stand containing species collectively known as northern hardwoods. The characteristic key species is sugar maple, which takes up one-fifth of the stand's growing space. Associate species include beech, red maple, hemlock, yellow birch, white birch, basswood and white ash. Species with a minor presence are hophornbeam, aspen, oak, white pine and fir. Although poles are present, the stand mostly consists of sawtimber-size trees. Trees range from 2" to 24" in diameter, with an average of 8". The average diameter of the canopy trees is 11". It is an overmature even-aged stand, with most trees >100 years old. Many older trees are declining and falling over, creating small canopy openings for regeneration to get established. It is starting to make the transition to an all-aged structure with characteristics of old growth. With an average basal area of 126 ft²/acre for the canopy, stand 1 is just above the "fully stocked" level, i.e. overstocked. Canopy height is moderate to tall with full closure of tree crowns.



Tree quality is average, with a mix of acceptable stems and poorer quality pulpwood. Many of the sawtimber-size trees (>12" diameter) are not of sawtimber quality due to seams, rot, large limbs and/or crookedness. Snags and deadfall are common. The growth rate is about $\frac{1}{4}$ cords, or 100 board feet, per acre per year. Standing volume per acre is high with 3.3 mbf of sawtimber and 34 cords of pulp. Sawtimber volume comprises an average 16% of the total volume of commercial wood. Sugar maple and red maple together make up almost $\frac{1}{2}$ of the sawtimber volume. Regeneration is mostly shade-tolerant trees – sugar maple, beech, hemlock, plus some red maple and fir, as well as the shrubby striped maple.

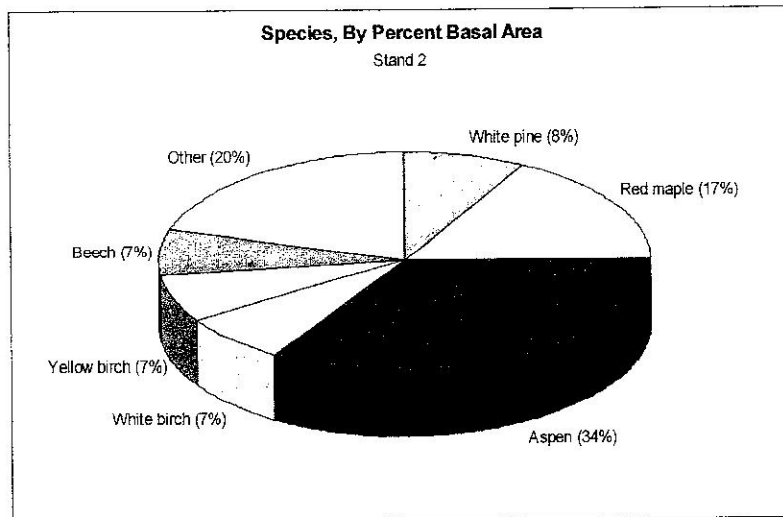
Porcupines are active in the area, chewing on hemlock saplings. Woody shrubs are not too common, limited to hazelnut in some openings.

RECOMMENDATIONS

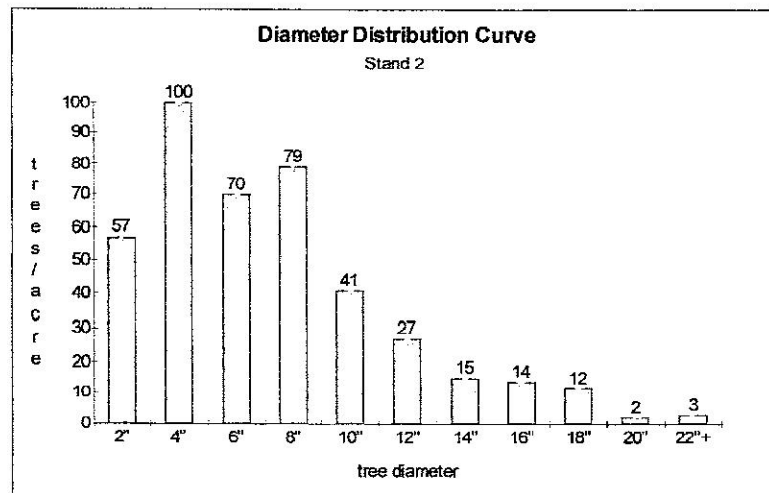
Due to the current old age and large size of many of the trees in stand 1, the long-term objective should be the protection of both units as reserve islands. Natural processes should be allowed progress, with the eventual establishment of an old growth stand. Low priority.

If timber production ever was a goal, operability and truck access limitations would diminish the timber value. The ideal structure goals would be an uneven-aged stand with a basal area of 70 ft²/acre and a largest diameter tree of 24". From the current overstocked condition, the canopy basal area would be reduced by 50 ft²/acre, yielding the equivalent of 200 cords. A 20-year selection harvest cycle will produce a sustainable yield of 140 cords per harvest from an adequately stocked stand. Harvest restrictions in the Resource Protection zone must be honored.

Stand 2 is in the middle section of the property, reaching both the south corner and the pond. It lies on both sides of the town road and is accessed directly from the road. The old foundations of the house and garage are in the middle, near the road. Stone walls are present on both sides of the foundations. The terrain ranges from a gentle slope southwest of the road to moderate slopes elsewhere. Soils are mostly deep to hardpan, well drained and stony. What seems to have been cropland between the walls is freer from surface stones. Site quality is excellent for not only white pine and red oak, but also for northern hardwoods. Operability with machines is very good. A Resource Protection zone runs along the edge of the pond.



This hardwood stand contrasts with stand 1 by not having a significant sugar maple component. Instead, bigtooth aspen is the dominant species with a third of the growing space. Red maple is also common, followed by white pine, white and yellow birch and beech. Other trees present in lesser numbers are oak, sugar maple, white ash, hemlock and fir. Most of the trees are sawtimber size. Diameters range from 2" to 34", with an average of 8". It is even-aged, around 80 years old. The exception is west and north of the house foundation, where the trees are younger poles (50 years) due to a later date of agricultural abandonment. The total basal area is 164 ft²/acre. Stocking for commercial (6"+ diameter) canopy stems is very high, at 154 ft²/acre of basal area. The ideal stocking is 70 ft²/acre of basal area. Thus, the site is overstocked. The canopy height is tall and has a fully closed crown.



Tree quality is good. Since the aspen is the more substantial bigtooth species rather than quaking, many aspen stems are sawtimber quality. Some of the beech are free of the beech bark disease. The white pines are limby and/or forked. Snags and cavity trees are present. The growth rate is about 100 mbf per acre per year. Standing volume per acre is very high with 4.5 mbf of sawtimber and 14 cords of pulp. Aspen makes up $\frac{1}{2}$ of the sawtimber volume, with most of the balance being white pine, oak, and ash. The percentage of sawtimber volume is high (22%). Regeneration is mostly shade-tolerant trees (similar to stand 1). Beech is most common, along with fir, hemlock and sugar maple, as oak and aspen in openings. Hazelnut and striped maple are common east of the road.

RECOMMENDATIONS

The long-term objective should be timber production. The stand is more operable than stand 1 and has a high volume of merchantable wood. Management will be on an uneven-aged basis. The structure goals should be a basal area of 70 ft²/acre and a largest diameter tree of 24". Favor the less common and more valuable species, such as oak, sugar maple and ash. A 20-year selection harvest cycle will produce a sustainable yield of 240 cords per harvest from an adequately stocked stand.

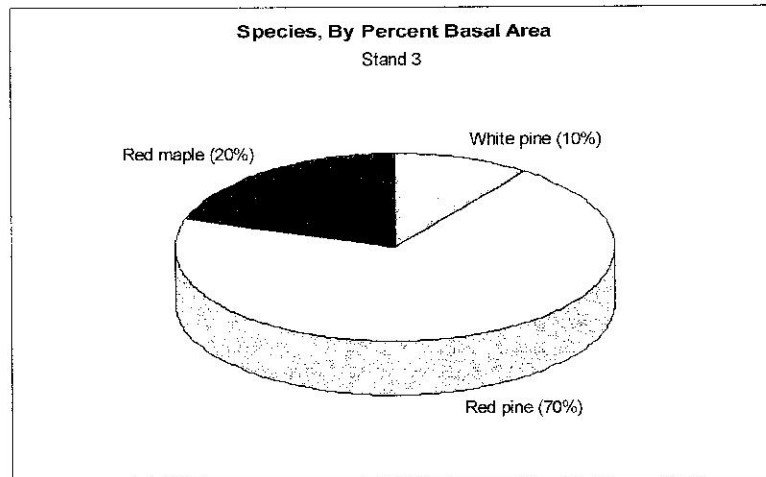
The first harvest probably shouldn't reduce the basal area immediately to 70 ft²/acre to avoid shock. Aim for a reduction of 1/3 to around 100 ft²/acre. Harvest a combination of mature sawtimber and poor quality stems. Estimated yield would be 240 cords and 38 mbf. This would have a stumpage value of about \$3,340, reflecting a lower value due to the lot's access problem. Harvest restrictions in the Resource Protection zone must be honored.

Alternatively, the stand can simply be left uncut and allowed to develop old growth conditions over the next 100 years.

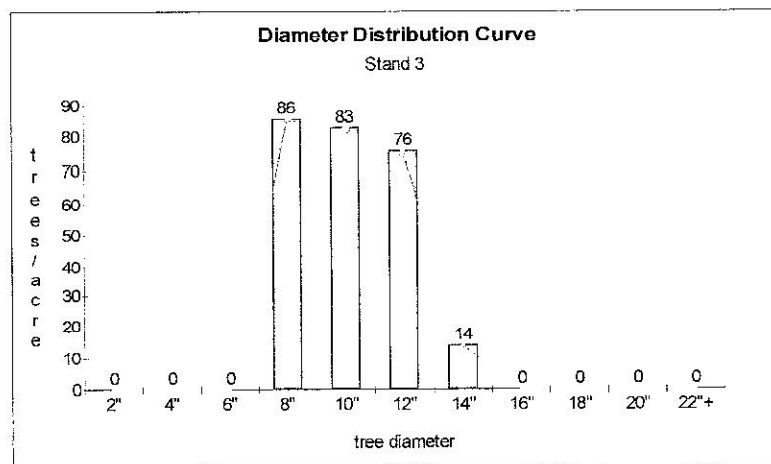
STAND 3 - SOFTWOOD SAWTIMBER (S-3-A)

¼ acre

Stand 3 is a very small stand near the old house foundation. It is easily accessible from the door yard of the house. The terrain is a gentle slope, allowing excellent operating conditions for machines. Soils are deep to hardpan and well drained. It is in the farmhouse's backyard and was cleaned of surface stones. Site quality is excellent for white pine, red oak, and northern hardwoods.



Stand 3 is a plantation of red pine mixed with some natural red maple and white pine. It was planted in the late 1950s and is now 41-5 years old. The trees are mostly sawtimber. Tree diameters are limited in their range, only 8 - 14". It averages 10". The basal area is 150 ft²/acre. Stocking is in the adequate range. The canopy height is tall with full crown closure.



Tree quality is very good. Growth rate is about 0.6 cord per acre per year. Standing volume per acre is high at 39 cords of pulpwood and 6.5 mbf of sawtimber. Sawtimber is a high proportion (25%) of total commercial wood volume. Regeneration is inadequate. A few residual apple trees are scattered in and near the stand. A deerstand is also nearby

RECOMMENDATIONS

Long-term objective for stand 3 is timber production. Stocking should be 120 ft²/acre of basal area. A 20-year selection harvest cycle will produce a sustainable yield of 3-4 cords per harvest from an adequately stocked stand.

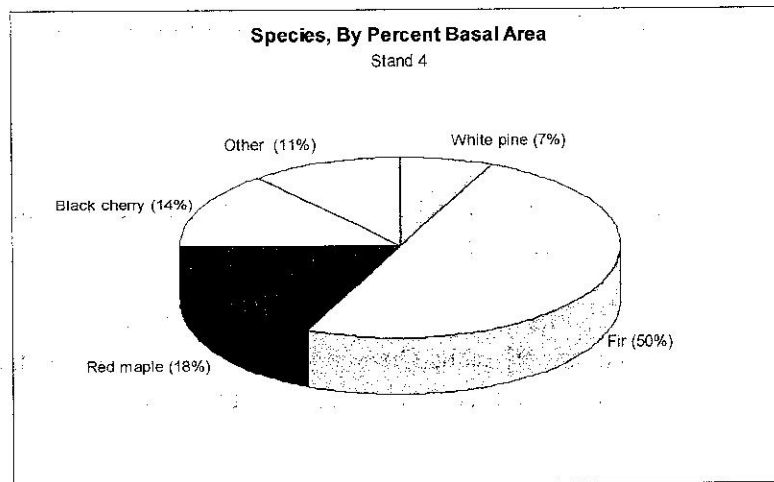
Stand 2 can be lightly thinned now, but would not be economical. It would only pay as part of any timber harvest operation in stand 2. Leave alone for now. Low priority.

One worthwhile act would be to release the apple trees for the benefit of deer and other animals.

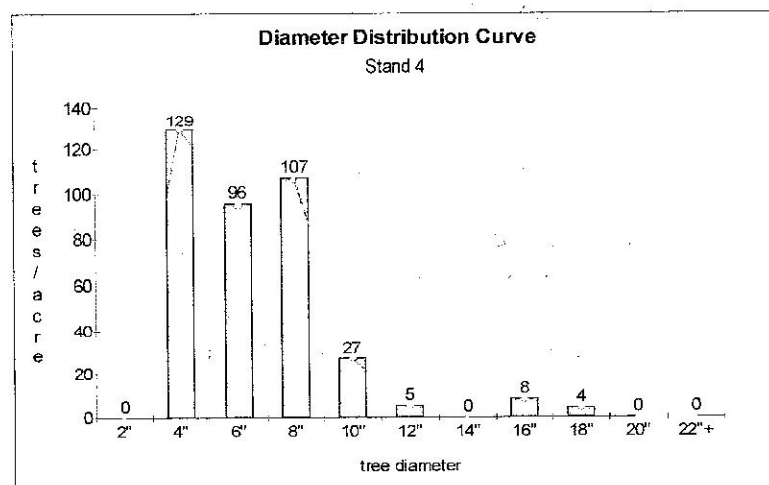
STAND 4 - MIXEDWOOD POLETIMBER (M-2-B)

8 acres

Stand 4 is in on the northwest side of the property, adjacent to Pettengill Stream and the pond. The town road runs through the north end. It is accessed directly from the road or through stand 2. Slopes are moderate with some steeper spots and ledge. It flattens out near the stream and pond. The site is wetter than the rest of the lot. The soil on the upslope half is moderately deep to hardpan and moderately well drained. Site quality is excellent for white pine and red oak. The lower half is shallow to hardpan and is poorly drained. Both the Stream and pond have swampy edges. Site quality here is excellent only for white pine.



This is a mixedwood stand. Fir commands half the growing space. Red maple, black cherry and white pine are associates. Minor species include white and yellow birch and oak. Elm is by the stream crossing. It is a poletimber stand. Trees range from 4" to 18" in diameter, with an average of 7". The total basal area is 105 ft²/acre. On average, it is adequately stocked, though stocking is variable. The north half is denser than the south half. The canopy height is moderate with moderate crown closure.



Tree quality is good, except for the fir and cherry. Most of the other species have fine form. Growth rate is about 0.4 cord per acre per year. Standing volume per acre is moderately low with 21 cords of pulpwood and 1.6 mbf sawtimber. The sawtimber volume consists of white pine, white birch, red maple and oak. Sawtimber percentage of the total wood volume is somewhat low, at 13%. Regeneration is limited to fir and red maple. Hazelnut is thick in the south half, inhibiting tree seedlings from getting established. Alder is common along the water.

The Pettengill Stream and the pond are significant for wildlife. Old beavers chewing are near the stream. Other mammals, such as mink, muskrat or otter may also be present. Woodcock may frequent the alder patches. Waterfowl undoubtedly utilize the open water.

RECOMMENDATIONS

The long-term management objective is protection of the wetlands for their intrinsic ecological function and beauty, as well as wildlife habitat value.

Stand 4 should be left undisturbed and left to develop naturally. There is already a 75' no-cut strip along the wetlands within the Resource Protection. A combination of steep slope and low volume in the south half reduces its commercial attraction.

CONCLUSIONS

The Collamore lot contains excellent sites for timber production for all leading commercial species except spruce. The forest is dense and has a relatively high proportion of large trees, which is becoming rarer. This property stands in stark contrast with neighboring lots to the north, east and south. Access to the lot is hard will be costly; operability is limited on a portion of the property. Recreational use by the ATV and snowmobilers will continue.

SUMMARY OF MANAGEMENT PRIORITIES 2001-2011			
Year	Stand	Activity	Estimated Income/(cost)
2001-11		Reblaze and repaint southeast and east boundary lines (~2,000')	(\$125)
2002-3	2 & 3	Release apple trees near foundations	
2002-11	2 & 3	Selection harvest, if desired; ~240 cords & 38 mbf	\$3,300
2011	All	Update management plan	(\$?)